

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION**

BANDSPEED, LLC,

Plaintiff,

v.

SILICON LABORATORIES, INC.

Defendant.

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CASE NO. 1:18-cv-518

COMPLAINT

Plaintiff Bandspeed, LLC (“Bandspeed”), by and through its attorneys, files its Complaint against defendant Silicon Laboratories, Inc. (“Defendant”), and hereby alleges as follows:

I. NATURE OF ACTION

1. This is a patent infringement action to end Defendant’s unauthorized and infringing manufacture, use, sale, offering for sale, and/or importation of methods and products incorporating Bandspeed’s patented inventions.

2. Bandspeed is the owner of all right, title, and interest in and to United States Patent No. 7,027,418 (“the ’418 Patent”), issued on April 11, 2006 for “Approach for Selecting Communications Channels Based on Performance.”

3. Bandspeed is the owner of all right, title, and interest in and to United States Patent No. 7,477,624 (“the ’624 Patent”), issued on January 13, 2009 for “Approach for Managing the Use of Communications Channels Based on Performance.”

4. Bandspeed is the owner of all right, title, and interest in and to United States Patent No. 7,570,614 (“the ’614 patent”), issued on August 4, 2009 for “Approach for Managing Communications Channels Based on Performance.”

5. Bandspeed is the owner of all right, title, and interest in and to United States Patent No. 7,903,608 (“the ’608 Patent”), issued on March 8, 2011 for “Approach for Managing the Use of Communications Channels Based on Performance.”

6. Bandspeed is the owner of all right, title, and interest in and to United States Patent No. 8,542,643 (“the ’643 Patent”), issued on September 24, 2013 for “Approach for Managing the Use of Communications Channels Based on Performance.”

7. Bandspeed is the owner of all right, title, and interest in and to United States Patent No. 8,873,500 (“the ’500 Patent”), issued on October 28, 2014 for “Approach for Managing the Use of Communications Channels Based on Performance.”

8. Bandspeed is the owner of all right, title, and interest in and to United States Patent No. 9,379,769 (“the ’769 Patent”), issued on June 28, 2016 for “Approach for Managing the Use of Communications Channels Based on Performance.”

9. Bandspeed is the owner of all right, title, and interest in and to United States Patent No. 9,883,520 (“the ’520 Patent”), issued on January 30, 2018 for “Approach for Managing the Use of Communications Channels Based on Performance.”

10. The ’418 Patent, ’624 Patent, ’614 Patent, ’608 Patent, ’643 Patent, ’500 Patent, ’769 Patent, and ’520 Patent are, collectively, the “Patents.”

11. Bandspeed has all substantial right and interest to the Patents, including all rights to recover for all past and future infringement thereof.

12. Upon information and belief, Defendant has been and currently is infringing, contributing to the infringement of, and/or inducing the infringement of Bandspeed’s Patents, by, among other things, making, using, selling, importing, and/or offering for sale, within the territorial

boundaries of the United States, products that are covered by one or more claims of Bandspeed's Patents.

13. Defendant manufactures, provides, sells, offers for sale, imports, and/or distributes infringing products and services; and/or induces others to make and use its products and services in an infringing manner; and/or contributes to the making and use of infringing products and services by others, including its customers, who directly infringe the Patents.

II. THE PARTIES

14. Plaintiff Bandspeed is a Texas limited liability company with its principal place of business located in Austin, Texas.

15. Upon information and belief, Defendant is a Delaware corporation with its principal place of business located at 400 West Cesar Chavez, Austin, Texas 78701. Upon information and belief, Defendant is authorized to do business in Texas. Defendant may be served by serving its registered agent CT Corporation System, 1999 Bryan St., Suite 900, Dallas, Texas 75201-3136.

16. Defendant provides software and hardware solutions for the Internet infrastructure, industrial automation, consumer, and automotive markets.

17. Defendant has knowledge of the Patents and the infringing nature of its activities at least as early as the date when Bandspeed effected service of the Complaint or earlier. *See* Section VI regarding Defendant's knowledge of the '418, '624, '608, '643, '500, '769 and '520 Patents.

III. JURISDICTION AND VENUE

18. This is an action for patent infringement arising under the Patent Laws of the United States, in particular 35 U.S.C. §271, 281, 283, 284, and 285. This Court has jurisdiction over the subject matter of this action under 28 U.S.C. §1331 and 1338(a).

19. This Court has personal jurisdiction over Defendant and venue is proper in this Court pursuant to 28 U.S.C. §1391(b), (c), and 1400.

IV. PLAINTIFF'S PATENTS

20. The claims of the Patents describe inventive features and combinations relating to adaptive frequency hopping and the ability to avoid interference over communications channels that improved upon prior art systems and methods. In other words, the claims of the Patents generally describe novel techniques “for selecting sets of communications channels based on channel performance.” ’418 Patent at 4:49-50.

21. The Patents improve upon frequency hopping communications systems that existed at the time of the invention. One problem with frequency hopping communications systems is that coexistence problems arise between the frequency hopping communications system and non-frequency hopping communications systems that operate in the same frequency band. While the frequency hopping communications system hops over the entire frequency band, the non-frequency hopping communications systems occupy separate parts of the frequency band. When the frequency hopping communications system hops over part of the frequency band occupied by a non-frequency hopping communications system, there may be interference between the systems. Although the use of a frequency hopping protocol helps to lessen the interference problem because not all of the frequency hopping channels will interfere with other communications systems, there nevertheless remains interference on those channels that coincide with the non-frequency hopping communications systems. An example of the interference situation is the coexistence problem between the frequency hopping IEEE 802.15.1 WPAN and the non-frequency hopping IEEE 802.11b Wireless Local Area Network (WLAN) because both share the 2.4 GHz ISM band. ’418 Patent at 2:51-3:2. Interference results in data transmission errors, such as an increase in the bit

error rate (BER) or the loss of data packets, resulting in reduced transmission quality and performance and the need to retransmit the data. '418 Patent at 3:17-20.

22. One approach for managing the coexistence problem is to increase the power used in the transmissions so that the other interfering system have less of an impact on the system transmitting at the increased power. However, this increased power approach drains batteries used by the participants, and thus the required power increase may be impractical. Also, the increased power approach only benefits the system using the increased power and results in a bigger interference impact on other systems. '418 Patent at 3:12-29.

23. Another approach for managing the coexistence problem is to skip a "bad" channel that suffers from interference, such as by moving onto the next channel in the sequence or by jumping to another randomly selected channel. However, this skipping approach does not necessarily avoid other bad channels because the next channel used may also have an interference problem. Also, known "bad" and "good" channels may change over time due to the transient nature of some types of interference. '418 Patent at 3:30-38.

24. The claims of the Patents solve the coexistence problem by using a method or system not conventional at the time of the invention: adaptive frequency hopping. As described in the Patents, a set of channels is used for communication between devices according to a frequency hopping ("FH") protocol. Another set of communications channels is selected in a similar manner when a specified criterion is satisfied after expiration of a specified length of time, when the performance of at least one of the channels in the set of channels satisfies another performance criterion, or when a specified number of the set of channels satisfies yet another performance criterion. *See, e.g.*, '608 Patent at 4:64-5:6. "For example, the selection criteria may be to select the good channels but not the bad channels." *Id.* at 6:62-64. The claimed system first selects an

initial set of channels, and then periodically selects sets of channels based on later performance of the communications channels. *Id.* at 6:28-30; 4:22-24. The claimed system classifies a communication channel based on channel performances and one or more classification criteria. *Id.* at 15:8-10. “For example, a channel may be classified as ‘good’ or ‘bad’ based on the results of the channel performance testing by applying one or more performance measurements.” *Id.* at 15:10-14.

25. The Patents teach a method or device using a frequency hopping protocol that “transmits data on one channel, hops to the next channel in the hopping sequence to transmit more data, and continues by transmitting data on subsequent channels in the hopping sequence.” *See, e.g.,* ’500 Patent at 2:34-38. “When the FH communications system hops over part of the frequency band occupied by an NFH [non-frequency hopping] communications system, there may be interference between the systems.” *Id.* at 3:33-36. “Interference results in data transmission errors, such as an increase in the bit error rate (BER) or the loss of data packets, resulting in reduced transmission quality and performance and the need to retransmit the data.” *Id.* at 3:58-61. The invention avoids these problems by testing the plurality of communications channels and using a subset of channels that have been identified as good after testing for communications between participants using an adapted hopping sequence. *Id.* at 12:34-41 and 18:8-12. “Each channel of a communications system may be tested repeatedly by using master test packet 360 and slave test packet 380 described herein.” *Id.* at 12:34-36. For example, in a Bluetooth or IEEE 802.15.1 FH communications system, the frequency hopping rate is 1,600 hops per second, and there are 79 channels. Therefore, in one second, each of the 79 channels may be tested both from the master to the slave and from the slave to the master 20 times.” *Id.* at 12:36-41. “[A] master may select the channels classified as ‘good,’ generate a special packet that identifies the selected set of good

communications channels in the payload, and send the special packet to one or more other participants in the communications network.” *Id.* at 18:8-12.

26. The Patents specifically include a particular embodiment labeled the “referendum” approach that considers the channel performance as determined by a master and a certain number of slaves (collectively “participants”). *See, e.g.*, ’624 Patent at 16:47-49. Using the “referendum” approach, a participant has a vote on whether to use a given channel or not to use the channel. *Id.* at 16:65-66. “A certain number of votes (*e.g.*, the ‘passing mark’) is required for the channel to be judged ‘good’ and therefore available for use by the frequency hopping communications system.” *Id.* at 17:5-7.

27. The invention described in the Patents generally includes a device loading a set of default channels into a default channel register and a set of good channels into a good channel register. When a selection kernel addresses a bad channel stored in the default channel register, the bad channel is replaced by a good channel from the good channel register. *See, e.g.*, ’643 Patent at 20:1-21:14.

V. DEFENDANT’S ACTS

A. Infringing Bluetooth Classic (BR/EDR) Products

28. Defendant manufactures, provides, sells, offers for sale, and/or distributes products that use, practice and/or comply with the Bluetooth Core Specification Version 2.0+EDR or higher and other products that operate in a reasonably similar manner (“Infringing Bluetooth Classic Products”).

29. Defendant’s BT-121 product shall be referred to as the “Exemplary Infringing Bluetooth Classic Product.”

30. Through its actions, Defendant has infringed the Patents and actively induced others to infringe and contributed to the infringement by others of the Patents, throughout the United States.

31. Adaptive frequency hopping is material to practicing the invention described by the Patents.

32. Defendant is an associate member of the Bluetooth Special Interest Group.

33. Defendant intentionally manufactures and sells Infringing Bluetooth Classic Products that are designed to provide adaptive frequency hopping in a manner that infringes the Patents.

34. On information and belief, Defendant takes steps to test the Infringing Bluetooth Classic Products to ensure compliance with the Bluetooth Core Specification and to qualify an Infringing Bluetooth Classic Product for Bluetooth certification.

35. The Infringing Bluetooth Classic Products are certified as compliant with the Bluetooth Core Specification Version 2.0+EDR or higher. In connection with compliance, for qualifying Bluetooth products, Defendant submitted a Core Implementation Compliance Statement (or Core ICS). The Core ICS requires Defendant to disclose certain product capabilities, including adaptive frequency hopping (AFH), which is found in Table 26 of the Link Manager Protocol section.

36. On information and belief, Defendant has submitted Core ICSs that indicate “Yes” for support of certain features of adaptive frequency hopping that infringe the Patents.

37. On information and belief, Defendant has certified that the Infringing Bluetooth Classic Products are compliant with “Adaptive Frequency Hopping Kernel” as defined by Item 2 of the Physical Channel table within the Baseband section of the Implementation Conformance

Statement (ICS). For example, on information and belief, the Exemplary Infringing Bluetooth Classic Product implements an “Adaptive Frequency Hopping Kernel” as defined by Item 2 of the Physical Channel table within the Baseband section of the ICS for the Exemplary Infringing Bluetooth Classic Product.

38. On information and belief, the Infringing Bluetooth Classic Products implement “Adaptive Frequency Hopping” as defined by Item 16 of the Supported Features table (i.e., Table 2) within the Link Manager section of the ICS. On information and belief, Defendant has certified that the Infringing Bluetooth Classic Products are compliant with “Adaptive Frequency Hopping” as defined by Item 16 of the Supported Features table (i.e., Table 2) within the Link Manager section of the ICS.

39. On information and belief, the Exemplary Infringing Bluetooth Classic Product implements “Adaptive Frequency Hopping” as defined by Item 16 of the Supported Features table (i.e., Table 2) within the Link Manager section of the ICS for the Exemplary Infringing Bluetooth Classic Product. On information and belief, Defendant has certified that the Exemplary Infringing Bluetooth Classic Product is compliant with “Adaptive Frequency Hopping” as defined by Item 16 of the Supported Features table (i.e., Table 2) within the Link Manager section of the ICS for the Exemplary Infringing Bluetooth Classic Product.

40. On information and belief, the Infringing Bluetooth Classic Products implement “AFH Switch as master” as defined by Item 1 of the Adaptive Frequency Hopping table (i.e., Table 26) within the Link Manager section of the ICS. On information and belief, Defendant has certified that the Infringing Bluetooth Classic Products are compliant with “AFH Switch as master” as defined by Item 1 of the Adaptive Frequency Hopping table (i.e., Table 26) within the Link Manager section of the ICS.

41. On information and belief, the Exemplary Infringing Bluetooth Classic Product implements “AFH Switch as master” as defined by Item 1 of the Adaptive Frequency Hopping table (i.e., Table 26) within the Link Manager section of the ICS for the Exemplary Infringing Bluetooth Classic Product. On information and belief, Defendant has certified that the Exemplary Infringing Bluetooth Classic Product is compliant with “AFH Switch as master” as defined by Item 1 of the Adaptive Frequency Hopping table (i.e., Table 26) within the Link Manager section of the ICS for the Exemplary Infringing Bluetooth Classic Product.

42. On information and belief, the Infringing Bluetooth Classic Products include “Support of Channel Classification” as defined by Item 6 of the Adaptive Frequency Hopping table (i.e., Table 26) within the Link Manager section of the ICS. On information and belief, Defendant has certified that the Infringing Bluetooth Classic Products are compliant with “Support of Channel Classification” as defined by Item 6 of the Adaptive Frequency Hopping table (i.e., Table 26) within the Link Manager section of the ICS.

43. On information and belief, the Exemplary Infringing Bluetooth Classic Product includes “Support of Channel Classification” as defined by Item 6 of the Adaptive Frequency Hopping table (i.e., Table 26) within the Link Manager section of the ICS for the Exemplary Infringing Bluetooth Classic Product. On information and belief, Defendant has certified that the Exemplary Infringing Bluetooth Classic Product is compliant with “Support of Channel Classification” as defined by Item 6 of the Adaptive Frequency Hopping table (i.e., Table 26) within the Link Manager section of the ICS for the Exemplary Infringing Bluetooth Classic Product.

44. On information and belief, the Infringing Bluetooth Classic Products implement “Power Control” as defined by Item 10 of the Supported Features table (i.e., Table 2) within the

Link Manager section of the ICS. On information and belief, Defendant has certified that the Infringing Bluetooth Classic Products are compliant with “Power Control” as defined by Item 10 of the Supported Features table (i.e., Table 2) within the Link Manager section of the ICS.

45. On information and belief, the Exemplary Infringing Bluetooth Classic Product implements “Power Control” as defined by Item 10 of the Supported Features table (i.e., Table 2) within the Link Manager section of the ICS for the Exemplary Infringing Bluetooth Classic Product. On information and belief, Defendant has certified that the Exemplary Infringing Bluetooth Classic Product is compliant with “Power Control” as defined by Item 10 of the Supported Features table (i.e., Table 2) within the Link Manager section of the ICS for the Exemplary Infringing Bluetooth Classic Product.

46. On information and belief, the Infringing Bluetooth Classic Products implement “Enhanced Power Control” as defined by Item 20 of the Supported Features table (i.e., Table 2) within the Link Manager section of the ICS. On information and belief, Defendant has certified that the Infringing Bluetooth Classic Products are compliant with “Enhanced Power Control” as defined by Item 20 of the Supported Features table (i.e., Table 2) within the Link Manager section of the ICS.

47. On information and belief, the Exemplary Infringing Bluetooth Classic Product implements “Enhanced Power Control” as defined by Item 20 of the Supported Features table (i.e., Table 2) within the Link Manager section of the ICS for the Exemplary Infringing Bluetooth Classic Product. On information and belief, Defendant has certified that the Exemplary Infringing Bluetooth Classic Product is compliant with “Enhanced Power Control” as defined by Item 20 of the Supported Features table (i.e., Table 2) within the Link Manager section of the ICS for the Exemplary Infringing Bluetooth Classic Product.

48. The Infringing Bluetooth Classic Products are capable of performing adaptive frequency hopping.

49. The Exemplary Infringing Bluetooth Classic Product is capable of performing adaptive frequency hopping.

50. The Infringing Bluetooth Classic Products are capable of operating in the 2.4 GHz ISM frequency band.

51. The Exemplary Infringing Bluetooth Classic Product is capable of operating in the 2.4 GHz ISM frequency band.

52. The Infringing Bluetooth Classic Products are capable of participating in Bluetooth piconets with one or more other devices.

53. The Exemplary Infringing Bluetooth Classic Product is capable of participating in Bluetooth piconets with one or more other devices.

54. The Infringing Bluetooth Classic Products are capable of transmitting data packets to other devices.

55. The Exemplary Infringing Bluetooth Classic Product is capable of transmitting data packets to other devices.

56. The Infringing Bluetooth Classic Products are capable of receiving data packets from other devices.

57. The Exemplary Infringing Bluetooth Classic Product is capable of receiving data packets from other devices.

58. The Infringing Bluetooth Classic Products are capable of transmitting and/or receiving data packets on multiple frequencies.

59. The Exemplary Infringing Bluetooth Classic Product is capable of transmitting and/or receiving data packets on multiple frequencies.

60. The Infringing Bluetooth Classic Products are capable of transmitting and/or receiving data packets using a sequence of fewer than the total number of frequencies in the available band for a particular period of time.

61. The Exemplary Infringing Bluetooth Classic Product is capable of transmitting and/or receiving data packets using a sequence of fewer than the total number of frequencies in the available band for a particular period of time.

62. The Infringing Bluetooth Classic Products are capable of transmitting and/or receiving data in defined time slots.

63. The Exemplary Infringing Bluetooth Classic Product is capable of transmitting and/or receiving data in defined time slots.

64. The Infringing Bluetooth Classic Products are capable of changing the set of channels on which they transmit and/or receive data packets with other devices in a particular piconet during the connection lifetime of that piconet.

65. The Exemplary Infringing Bluetooth Classic Product is capable of changing the set of channels on which they transmit and/or receive data packets with other devices in a particular piconet during the connection lifetime of that piconet.

66. The Infringing Bluetooth Classic Products are capable of sending and/or receiving the LMP_set_AFH PDU (packet data unit) or functional equivalent as it is defined in the Bluetooth Core Specification version 2.0+EDR.

67. The Exemplary Infringing Bluetooth Classic Product is capable of sending and/or receiving the LMP_set_AFH PDU or functional equivalent as it is defined in the Bluetooth Core Specification version 2.0+EDR.

68. The Infringing Bluetooth Classic Products are capable of sending and/or receiving any packet that includes the AFH_Instant parameter or functional equivalent as it is defined in the Bluetooth Core Specification version 2.0+EDR.

69. The Exemplary Infringing Bluetooth Classic Product is capable of sending and/or receiving any packet that includes the AFH_Instant parameter or functional equivalent as it is defined in the Bluetooth Core Specification version 2.0+EDR.

70. The Infringing Bluetooth Classic Products are capable of sending and/or receiving data packets that include the AFH_Channel_Map parameter or functional equivalent as it is defined in the Bluetooth Core Specification version 2.0+EDR.

71. The Exemplary Infringing Bluetooth Classic Product is capable of sending and/or receiving data packets that include the AFH_Channel_Map parameter or functional equivalent as it is defined in the Bluetooth Core Specification Version 2.0+EDR.

72. The Infringing Bluetooth Classic Products are capable of selecting channels for transmission of data using the basic hop selection kernel in conformance with the Bluetooth Core Specification Version 2.0+EDR.

73. The Exemplary Infringing Bluetooth Classic Product is capable of selecting channels for transmission of data using the basic hop selection kernel in conformance with the Bluetooth Core Specification Version 2.0+EDR.

74. The Infringing Bluetooth Classic Products are capable of classifying channels in the available frequency band as at least used or unused for communication within a particular piconet at a particular time.

75. The Exemplary Infringing Bluetooth Classic Product is capable of classifying channels in the available frequency band as at least used or unused for communication within a particular piconet at a particular time.

76. The Infringing Bluetooth Classic Products are capable of using index and/or other data structures that represent frequency channels.

77. The Exemplary Infringing Bluetooth Classic Product is capable of using index and/or other data structures that represent frequency channels.

78. The Infringing Bluetooth Classic Products are capable of using one or more registers or functionally equivalent data structures to store representations of frequency channels.

79. The Exemplary Infringing Bluetooth Classic Product is capable of using one or more registers or functionally equivalent data structures to store representations of frequency channels.

80. The Infringing Bluetooth Classic Products are capable of using one or more remapping and/or substitution functions to select a channel for transmission of data.

81. The Exemplary Infringing Bluetooth Classic Product is capable of using one or more remapping and/or substitution functions to select a channel for transmission of data.

82. The Infringing Bluetooth Classic Products are capable of using one or more reindexing and/or substitution operations to select a channel for transmission of data.

83. The Exemplary Infringing Bluetooth Classic Product is capable of using one or more reindexing and/or substitution operations to select a channel for transmission of data.

84. The Infringing Bluetooth Classic Products are capable of representing a channel's status as at least good, bad, and/or unknown for transmission using a single bit.

85. The Exemplary Infringing Bluetooth Classic Product is capable of representing a channel's status as at least good, bad, and/or unknown for transmission using a single bit.

86. The Infringing Bluetooth Classic Products are capable of representing a channel's status as at least used or unused for transmission using a single bit.

87. The Exemplary Infringing Bluetooth Classic Product is capable of representing a channel's status as at least used or unused for transmission using a single bit.

88. Certain of Defendant's customers request, require, and/or engage features and capabilities, including adaptive frequency hopping, that comply with the Bluetooth Core Specification, and Defendant markets and advertises one or more of its Infringing Bluetooth Classic Products' compliance with the Bluetooth Core Specification regarding such features and capabilities.

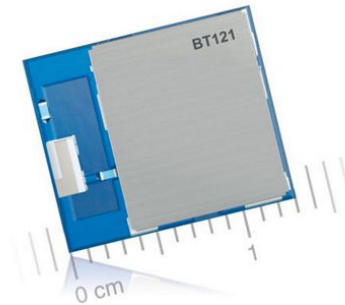
89. Defendant sells the BT-121 Bluetooth Smart Ready Module and other similar Bluetooth devices on its website. <https://www.silabs.com/products/wireless/bluetooth/bluetooth-low-energy-modules/bt121-bluetooth-smart-ready-module>.

Silicon Labs » Products » Wireless » Bluetooth » Bluetooth Module Solutions » Bluegiga BT121 Bluetooth Smart Ready Module

Bluegiga BT121 *Bluetooth*® Smart Ready Module

Connectivity to Both Bluetooth BR/EDR and Smart Devices

BT121 is a Bluetooth Smart Ready module targeted for applications that require both Bluetooth Smart and Classic connectivity. It can connect to legacy devices that only support Bluetooth SPP or Apple iAP2 profiles as well to devices that support Bluetooth Smart. BT121 integrates a high performance Bluetooth radio, a low-power ARM® Cortex® microcontroller and a Bluegiga Bluetooth Smart Ready stack software making it extremely easy-to-use as no RF or Bluetooth software development is needed. BT121 can be used as a modem together with a separate host MCU, but applications can also be embedded into the built-in ARM Cortex MCU with the Bluegiga BGScript™ scripting language.



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Id.

90. Defendant markets the BT-121 as “a Bluetooth Smart Ready module targeted for applications that require both Bluetooth Smart and Classic connectivity.” *Id.*

91. Defendant instructs users to use Bluetooth functionality of the BT-121 because it is “Bluetooth 4.1 Smart Ready compliant” and allows for “[c]onnectivity to both Bluetooth BR/EDR and Smart devices.” *Id.*

92. Defendant induces its customers to infringe and contributes to such infringement by instructing or specifying that its customers install infringing integrated circuits such that the Infringing Bluetooth Classic Products operate in an infringing manner. Defendant specifies that the Infringing Bluetooth Classic Products operate in an infringing manner by providing source code or firmware on the integrated circuit that causes it to operate in an infringing manner.

93. The normal, intended operation of the Infringing Bluetooth Classic Products is to provide certain capabilities and features, including adaptive frequency hopping, in compliance

with Version 1.2 or later of the Bluetooth Core Specification, that infringe the Patents. The Infringing Products therefore have no substantial non-infringing uses.

94. Therefore, Defendant induces its customers to directly infringe or contribute to the direct infringement of its customers.

95. Bandspeed has been and will continue to suffer damages as a result of Defendant's infringing acts.

B. Infringing Bluetooth Low Energy Products

96. Defendant manufactures, provides, sells, offers for sale, and/or distributes infringing products, such as integrated circuits, or a set of integrated circuits for wireless communications devices, that use, practice and/or comply with the Bluetooth low energy protocol as described in Version 4.0 and any later version of the Bluetooth Core Specification ("Infringing Bluetooth LE Products").

97. The Infringing Bluetooth LE Products infringe the '608 Patent, '643 Patent, '500 Patent, '769 Patent and '520 Patent ("LE Patents").

98. The EFR32 Blue Gecko Bluetooth Chips for Low Energy and Bluetooth 5 shall be referred to as the "Exemplary Infringing Bluetooth LE Product."

99. Through its actions, Defendant has infringed the LE Patents, has actively induced others to infringe, and has contributed to the infringement by others of the LE Patents, throughout the United States.

100. Defendant manufactures, provides, sells, offers for sale, and/or distributes integrated circuits, or sets of integrated circuits, that are compliant with the low energy protocol in Version 4.0 and any later version of the Bluetooth Core Specification.

101. Bluetooth low energy is material to practicing the invention described by the LE Patents.

102. Defendant intentionally manufactures and sells Infringing Bluetooth LE Products that are designed to provide low energy functionality.

103. Defendant certifies that the Infringing Bluetooth LE Products are compliant with Version 4.0 or later of the Bluetooth Core Specification.

104. On information and belief, Defendant takes steps to test these products to ensure compliance with the Bluetooth Core Specification and to qualify an Infringing Bluetooth LE Product for Bluetooth certification. On information and belief, in connection with compliance, for qualifying Bluetooth products, Defendant prepares a Core ICS. On information and belief, portions of the Core ICS require Defendant to acknowledge whether the product supports certain capabilities, including compliance and features consistent with the Bluetooth low energy protocol.

105. The Exemplary Infringing LE Product is capable of performing adaptive frequency hopping.

106. The Infringing LE Products are capable of performing adaptive frequency hopping.

107. The Exemplary Infringing Bluetooth LE Product is capable of communicating wirelessly.

108. The Infringing Bluetooth LE Products are capable of communicating wirelessly.

109. The Exemplary Infringing Bluetooth LE Product is capable of participating in a Bluetooth piconet.

110. The Infringing Bluetooth LE Products are capable of participating in a Bluetooth piconet.

111. The Exemplary Infringing Bluetooth LE Product is capable of performing as a master in a Bluetooth piconet.

112. The Infringing Bluetooth LE Products are capable of performing as a master in a Bluetooth piconet.

113. The Exemplary Infringing Bluetooth LE Product is capable of performing as a slave in a Bluetooth piconet.

114. The Infringing Bluetooth LE Products are capable of performing as a slave in a Bluetooth piconet.

115. The Exemplary Infringing Bluetooth LE Product is compliant with Bluetooth Core Specification Version 4.0 or higher.

116. The Infringing Bluetooth LE Products are compliant with Bluetooth Core Specification Version 4.0 or higher.

117. The Exemplary Infringing Bluetooth LE Product has been certified as compliant with Bluetooth Core Specification Version 4.0 or higher.

118. The Infringing Bluetooth LE Products are certified as compliant with Bluetooth Core Specification Version 4.0 or higher.

119. The Exemplary Infringing Bluetooth LE Product is compliant with Bluetooth Low Energy.

120. The Infringing Bluetooth LE Products are compliant with Bluetooth Low Energy.

121. The Exemplary Infringing Bluetooth LE Product has been certified as compliant with Bluetooth Low Energy.

122. The Infringing Bluetooth LE Products have been certified as compliant with Bluetooth Low Energy.

123. The Exemplary Infringing Bluetooth LE Product is capable of transmitting and/or receiving packets wirelessly.

124. The Infringing Bluetooth LE Products are capable of transmitting and/or receiving packets wirelessly.

125. The Exemplary Infringing Bluetooth LE Product is capable of operating in the 2.4 GHz ISM band.

126. The Infringing Bluetooth LE Products are capable of operating in the 2.4 GHz ISM band.

127. The Exemplary Infringing Bluetooth LE Product is capable of using a frequency hopping transceiver.

128. The Infringing Bluetooth LE Products are capable of using a frequency hopping transceiver.

129. The Exemplary Infringing Bluetooth LE Product is capable of Bluetooth frequency hopping.

130. The Infringing Bluetooth LE Products are capable of Bluetooth frequency hopping.

131. The Exemplary Infringing Bluetooth LE Product is capable of Bluetooth adaptive frequency hopping.

132. The Infringing Bluetooth LE Products are capable of Bluetooth adaptive frequency hopping.

133. The Exemplary Infringing Bluetooth LE Product uses a random or pseudo-random ordering of channels in the 2.4 GHz ISM band for data transmission.

134. The Infringing Bluetooth LE Products uses a random or pseudo-random ordering of channels in the 2.4 GHz ISM band for data transmission.

135. The Exemplary Infringing Bluetooth LE Product uses a random or pseudo-random ordering of 37 channels in the 2.4 GHz ISM band for data transmission.

136. The Infringing Bluetooth LE Products use a random or pseudo-random ordering of 37 channels in the 2.4 GHz ISM band for data transmission.

137. The Exemplary Infringing Bluetooth LE Product uses a frequency hopping pattern that is capable of being adapted to exclude one or more channels where interference is observed or measured.

138. The Infringing Bluetooth LE Products use a frequency hopping pattern that is capable of being adapted to exclude one or more channels where interference is observed or measured.

139. The Exemplary Infringing Bluetooth LE Product uses a frequency hopping pattern that is capable of being adapted to exclude channels on which interference is observed or suspected.

140. The Infringing Bluetooth LE Products use a frequency hopping pattern that is capable of being adapted to exclude channels on which interference is observed or suspected.

141. The Exemplary Infringing Bluetooth LE Product uses a frequency hopping pattern that is capable of being adapted to exclude channels based at least in part on the performance of those channels.

142. The Infringing Bluetooth LE Products use a frequency hopping pattern that is capable of being adapted to exclude channels based at least in part on the performance of those channels.

143. The Exemplary Infringing Bluetooth LE Product is capable of sending and/or receiving a CONNECT_PDU or functional equivalent as it is defined in the Bluetooth Core Specification version 4.0.

144. The Infringing Bluetooth LE Products are capable of sending and/or receiving a CONNECT_PDU or functional equivalent as it is defined in the Bluetooth Core Specification version 4.0.

145. The Exemplary Infringing Bluetooth LE Product is capable of sending and/or receiving a CONNECT_PDU or functional equivalent as it is defined in the Bluetooth Core Specification version 4.0 that contains an LLData field or functional equivalent.

146. The Infringing Bluetooth LE Products are capable of sending and/or receiving a CONNECT_PDU or functional equivalent as it is defined in the Bluetooth Core Specification version 4.0 that contains an LLData field or functional equivalent.

147. The Exemplary Infringing Bluetooth LE Product is capable of sending and/or receiving an LLData field or functional equivalent that contains a ChM field or functional equivalent.

148. The Infringing Bluetooth LE Products are capable of sending and/or receiving an LLData field or functional equivalent that contains a ChM field or functional equivalent.

149. The Exemplary Infringing Bluetooth LE Product is capable of sending and/or receiving an LLData field or functional equivalent that contains a Hop field or functional equivalent.

150. The Infringing Bluetooth LE Products are capable of sending and/or receiving an LLData field or functional equivalent that contains a Hop field or functional equivalent.

151. The Exemplary Infringing Bluetooth LE Product is capable of sending and/or receiving a ChM field or functional equivalent that contains a subset of channels to be used for communication.

152. The Infringing Bluetooth LE Products are capable of sending and/or receiving a ChM field or functional equivalent that contains a subset of channels to be used for communication.

153. The Exemplary Infringing Bluetooth LE Product is capable of classifying channels used or unused for communication at a particular time.

154. The Infringing Bluetooth LE Products are capable of classifying channels used or unused for communication at a particular time.

155. The Exemplary Infringing Bluetooth LE Product is capable of classifying channels used or unused for communication at a particular time based at least in part on performance measurements.

156. The Infringing Bluetooth LE Products are capable of classifying channels used or unused for communication at a particular time based at least in part on performance measurements.

157. The Exemplary Infringing Bluetooth LE Product is capable of indexing channels to be used for communication at a particular time.

158. The Infringing Bluetooth LE Products are capable of indexing channels to be used for communication at a particular time.

159. The Exemplary Infringing Bluetooth LE Product uses a Hop field or functional equivalent that contains an increment value as input to the channel selection algorithm of the frequency hopping implementation.

160. The Infringing Bluetooth LE Products use a Hop field or functional equivalent that contains an increment value as input to the channel selection algorithm of the frequency hopping implementation.

161. The Exemplary Infringing Bluetooth LE Product uses an LLData field or functional equivalent that contains timing information that includes the sent or transmission time of the packets.

162. The Infringing Bluetooth LE Products use an LLData field or functional equivalent that contains timing information that includes the sent or transmission time of the packets.

163. The packet data transmitted by the Exemplary Infringing Bluetooth LE Product includes timing information indicative of the number of time slots to wait between packet transmissions.

164. The packet data transmitted by the Infringing Bluetooth LE Products includes timing information indicative of the number of time slots to wait between packet transmissions.

165. The Exemplary Infringing Bluetooth LE Product is capable of sending and/or receiving an LLData field or functional equivalent that contains an Interval field or functional equivalent.

166. The Infringing Bluetooth LE Products are capable of sending and/or receiving an LLData field or functional equivalent that contains an Interval field or functional equivalent.

167. The Exemplary Infringing Bluetooth LE Product is capable of sending and/or receiving an LLData field or functional equivalent that contains a Latency field or functional equivalent.

168. The Infringing Bluetooth LE Products are capable of sending and/or receiving an LLData field or functional equivalent that contains a Latency field or functional equivalent.

169. The Exemplary Infringing Bluetooth LE Product is capable of sending and/or receiving an LLData field or functional equivalent that is usable for establishing a timing reference point and time period that is used to determine the timing of subsequent packet transmissions.

170. The Infringing Bluetooth LE Products are capable of sending and/or receiving an LLData field or functional equivalent that is usable for establishing a timing reference point and time period that is used to determine the timing of subsequent packet transmissions.

171. The Exemplary Infringing Bluetooth LE Product is capable of measuring time in the number of transmission slots or events.

172. The Infringing Bluetooth LE Products are capable of measuring time in the number of transmission slots or events.

173. The Exemplary Infringing Bluetooth LE Product is capable of sending and/or receiving an LLData field or functional equivalent that contains on or more fields determinative of a frequency hopping pattern.

174. The Infringing Bluetooth LE Products are capable of sending and/or receiving an LLData field or functional equivalent that contains one or more fields determinative of a frequency hopping pattern.

175. The Exemplary Infringing Bluetooth LE Product is capable of sending and/or receiving an LLData field or functional equivalent that contains one or more fields usable as inputs to a frequency hopping algorithm.

176. The Infringing Bluetooth LE Products are capable of sending and/or receiving an LLData field or functional equivalent that contains one or more fields usable as inputs to a frequency hopping algorithm.

177. The Exemplary Infringing Bluetooth LE Product is capable of using a frequency hopping pattern for data transmission that is a specific ordering of data channels by index position in a data structure.

178. The Infringing Bluetooth LE Products are capable of using a frequency hopping pattern for data transmission that is a specific ordering of data channels by index position in a data structure.

179. The Exemplary Infringing Bluetooth LE Product is capable of using a hopping pattern for data transmission that can be adapted to exclude a portion of the frequencies that are used by interfering devices.

180. The Infringing Bluetooth LE Products are capable of using a hopping pattern for data transmission that can be adapted to exclude a portion of the frequencies that are used by interfering devices.

181. The Exemplary Infringing Bluetooth LE Product is capable of reducing the number of channels used for data transmission through the channel map indicating only the used channels.

182. The Infringing Bluetooth LE Products are capable of reducing the number of channels used for data transmission through the channel map indicating only the used channels.

183. The Exemplary Infringing Bluetooth LE Product is capable of adjusting the channel set to exclude one or more channels from use by the frequency hopping implementation.

184. The Infringing Bluetooth LE Products are capable of adjusting the channel set to exclude one or more channels from use by the frequency hopping implementation.

185. The Exemplary Infringing Bluetooth LE Product is capable of using a data structure for indexing channels to be used for frequency hopping communication.

186. The Infringing Bluetooth LE Products are capable of using a data structure for indexing channels to be used for frequency hopping communication.

187. The Exemplary Infringing Bluetooth LE Product is capable of using a register for indexing channels to be used for frequency hopping communication.

188. The Infringing Bluetooth LE Products are capable of using a register for indexing channels to be used for frequency hopping communication.

189. The Exemplary Infringing Bluetooth LE Product is capable of loading channel indices into a register.

190. The Infringing Bluetooth LE Products are capable of loading channel indices into a register.

191. The Exemplary Infringing Bluetooth LE Product is capable of storing channel indices in a register.

192. The Infringing Bluetooth LE Products are capable of storing channel indices in a register.

193. The Exemplary Infringing Bluetooth LE Product is capable of updating the subset of channels to be used for communication in a piconet.

194. The Infringing Bluetooth LE Products are capable of updating the subset of channels to be used for communication in a piconet.

195. The Exemplary Infringing Bluetooth LE Product is capable of updating a channel map by sending an LL_CHANNEL_MAP_REQ PDU or functional equivalent as it is defined in the Bluetooth Core Specification version 4.0.

196. The Infringing Bluetooth LE Products are capable of updating a channel map by sending an LL_CHANNEL_MAP_REQ PDU or functional equivalent as it is defined in the Bluetooth Core Specification version 4.0.

197. The Exemplary Infringing Bluetooth LE Product is capable of sending and/or receiving an LL_CHANNEL_MAP_REQ PDU or functional equivalent as it is defined in the

Bluetooth Core Specification version 4.0 containing a new channel map with an associated indexing and initial index position.

198. The Infringing Bluetooth LE Products are capable of sending and/or receiving an LL_CHANNEL_MAP_REQ PDU or functional equivalent as it is defined in the Bluetooth Core Specification version 4.0 containing a new channel map with an associated indexing and initial index position.

199. The Exemplary Infringing Bluetooth LE Product is capable of sending and/or receiving an LL_CHANNEL_MAP_REQ PDU or functional equivalent as it is defined in the Bluetooth Core Specification version 4.0 containing an Instant field or functional equivalent, which indicates when the new channel map shall take effect.

200. The Infringing Bluetooth LE Products are capable of sending and/or receiving an LL_CHANNEL_MAP_REQ PDU or functional equivalent as it is defined in the Bluetooth Core Specification version 4.0 containing an Instant field or functional equivalent, which indicates when the new channel map shall take effect.

201. The Exemplary Infringing Bluetooth LE Product uses a hop index and channel map to identify a physical channel. If the identified channel is identified as to be used and is the next usable channel according to the channel selection and hopping algorithms, it is used for communication. If the identified channel is not identified as to be used, it is not used and instead the next available used channel according to the channel selection, hopping, and remapping algorithms and procedures is selected.

202. The Infringing Bluetooth LE Products use a hop index and channel map to identify a physical channel. If the identified channel is identified as to be used and is the next usable channel according to the channel selection and hopping algorithms, it is used for communication. If the

identified channel is not identified as to be used, it is not used and instead the next available used channel according to the channel selection, hopping, and remapping algorithms and procedures is selected.

203. Certain of Defendant's customers request, require, and/or engage features and capabilities, including the low energy protocol, that comply with the Bluetooth Core Specification, and Defendant markets and advertises its Infringing Bluetooth LE Products' compliance with the Bluetooth Core Specification regarding such features and capabilities.

204. Defendant induces its customers to infringe and contributes to such infringement by instructing or specifying that its customers install the infringing integrated circuits in products such that the Infringing Bluetooth LE Products operate in an infringing manner. Defendant specifies that the Infringing Bluetooth LE Products operate in an infringing manner by providing source code or firmware on the integrated circuit that causes it to operate in an infringing manner.

205. Defendant sells the EFR32 Blue Gecko Bluetooth Chips and other similar Bluetooth devices on its website.

EFR32™ Blue Gecko *Bluetooth*® Chips (SoCs) for Low Energy and Bluetooth 5

Quickly deliver *Bluetooth* Low Energy or Bluetooth mesh connectivity with Silicon Labs Blue Gecko energy-friendly SoCs. In addition to Bluetooth connectivity, chips in the family also include the option to add multiprotocol sub-GHz and 2.4 GHz. Take advantage of a Bluetooth SDK and Simplicity Studio development tools that support module-based and discrete circuit designs.

<https://www.silabs.com/products/wireless/bluetooth/blue-gecko-bluetooth-low-energy-socs>.

206. Defendant markets the EFR32 as a Bluetooth Low Energy Radio compatible with Bluetooth 5 and Bluetooth mesh specifications.

Bluetooth Low Energy Radio

- Compatible With Bluetooth 5 and Bluetooth mesh specification

207. Defendant instructs users to use Bluetooth functionality of the EFR32. Defendant advertises the device as able to “[q]uickly deliver Bluetooth Low Energy or Bluetooth mesh connectivity.” *Id.*

208. Defendant’s documents advertise that the “benefits of Bluetooth low energy technology” include “[r]eliable and robust ... AFH (Adaptive Frequency Hopping).”

As well as ultra-low power and connectivity to smartphones, PCs, and tablets, other benefits of Bluetooth low energy technology include:

- Low cost
- Reliable and robust: AFH (Adaptive Frequency Hopping), retransmissions and 24-bit CRC (Cyclic Redundancy Checks)

See UG103.14: Application Development Fundamentals: Bluetooth Smart Technology (relating to EFR32 Blue Gecko Bluetooth Chips) at p. 2.

209. AFH is used to select a data channel for communication during a given time interval.

210. AFH is reliable, robust, and adapts to interference.

211. Defendant encourages the use of Bluetooth’s AFH functionality by its users and/or customers.

Data channels are used for bidirectional communication between connected devices. AFH (Adaptive FHSS) is used to select a data channel for communication during a given time interval. AFH is reliable, robust, and adapts to interference.

See *id.* at p. 4.

212. Defendant further states that Bluetooth low energy connections “use Adaptive Frequency Hopping (AFH) to detect and adapt to the surrounding RF conditions and provide a reliable physical layer.”

4.1.3 Connections

Connections allow application data to be transmitted in a reliable and robust manner, as Bluetooth low energy connections use CRCs, acknowledgements, and retransmissions of lost data to ensure correct data delivery. In addition, the Bluetooth low energy connections use Adaptive Frequency Hopping (AFH) to detect and adapt to the surrounding RF conditions and provide a reliable physical layer. Connections also support encryption and decryption of data to ensure its confidentiality.

The Bluetooth low energy connection always starts by a scanner receiving an advertisement packet that includes the fact that the advertiser allows connections. The following figure illustrates how Bluetooth low energy connection establishment happens.

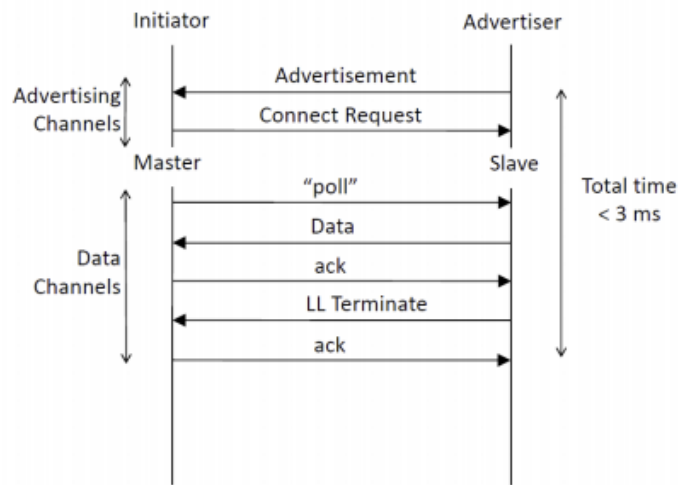


Figure 4.4. Connection Establishment, Transmission of One Packet, and Connection Termination

See id. at 9.

213. The normal, intended operation of the Infringing Bluetooth LE Products is to provide certain capabilities and features that infringe the LE Patents, including Bluetooth Low Energy capabilities and features in compliance with Version 4.0 or later of the Bluetooth Core Specification. The Infringing Bluetooth LE Products have no substantial non-infringing uses.

214. Therefore, Defendant induces its customers to directly infringe or contribute to the direct infringement of its customers.

215. Bandspeed has been and will continue to suffer damages as a result of Defendant’s infringing acts.

COUNT ONE

**PATENT INFRINGEMENT – U.S. PATENT NO. 7,027,418
(AGAINST INFRINGING BLUETOOTH CLASSIC PRODUCTS
AND INFRINGING BLUETOOTH LE PRODUCTS)**

216. Bandspeed realleges and incorporates preceding paragraphs herein.

A. Direct Infringement (35 U.S.C. § 271(a))

217. Defendant has directly infringed, and continues to directly infringe, individually and/or jointly with others, one or more claims of the '418 Patent by, among other things, making, using, offering for sale, selling, and/or importing Infringing Bluetooth Classic Products and Infringing Bluetooth LE Products (collectively, "Infringing Products").

218. Defendant jointly infringes the '418 Patent to the extent that the acts necessary to give rise to liability for direct infringement are shared between Defendant and a third party but can be legally attributed to Defendant. Defendant conditions participation in an activity or receipt of a benefit upon performance of a step or steps of a patented method and establishes the manner or timing of that performance.

219. Specifically, Defendant provides third parties, including customers and/or end-users, with Infringing Products. When an Infringing Bluetooth Classic Product or Infringing Bluetooth LE Product is engaged to use Bluetooth functionality in the manner designed and established by Defendant, the performance of the infringing functionality occurs. Defendant dictates when and how infringement occurs by virtue of providing software and hardware in the Infringing Products that dictate when and how the performance of the infringing functionality occurs.

B. Indirect Infringement (Inducement - 35 U.S.C. § 271(b))

220. Defendant has indirectly infringed and continues to indirectly infringe, the '418 Patent by inducing direct infringement of the '418 Patent by third parties including without

limitation manufacturers, resellers, and/or end users of the products that contain Infringing Bluetooth Classic Products in this District and elsewhere in the United States.

221. On information and belief, despite having knowledge of the '418 Patent, Defendant has specifically intended for persons who acquire and use the Infringing Products, including without limitation end-users of the Infringing Products, to acquire and use such devices in such a way that infringes one or more claims of the '418 Patent.

222. Defendant knew or should have known that its actions were inducing infringement.

223. Defendant had knowledge of the '418 Patent and the infringing nature of its activities at least as early as the date when Plaintiff effected service of the original Complaint.

224. Direct infringement is the result of activities performed by third parties in relation to the Infringing Products, including without limitation by third parties enabled and encouraged by Defendant to use the Infringing Products in their normal, customary way to infringe the '418 Patent.

225. With knowledge of the '418 Patent, Defendant directs and aids third parties to infringe the '418 Patent by, among other things, (i) enabling a user of the Infringing Bluetooth Classic Products to use adaptive frequency hopping and associated functionality in Version 1.2 and any later version of the Bluetooth Core Specification; (ii) providing instructions (including, by way of example, the tutorials, user guides, product guides, help library, and other documentation) to third parties for using the Infringing Bluetooth Classic Products in their customary way; (iii) advertising the Infringing Bluetooth Classic Products' support and compliance with the Bluetooth Core Specification; and (iv) providing to third parties the products and software and related equipment that may be required for or associated with infringement of the '418 Patent, all with knowledge that the induced acts constitute patent infringement.

226. With knowledge of the '418 Patent, Defendant directs and aids third parties to infringe the '418 Patent by, among other things, (i) enabling a user of the Infringing Bluetooth LE Products to use Bluetooth low energy functionality in Version 4.0 and any later version of the Bluetooth Core Specification; (ii) providing instructions (including, by way of example, the tutorials, user guides, product guides, help library, and other documentation) to third parties for using the Infringing Bluetooth LE Products in their customary way; (iii) advertising the Infringing Bluetooth LE Products' support and compliance with the Bluetooth Core Specification; and (iv) providing to third parties the products and software and related equipment that may be required for or associated with infringement of the '418 Patent, all with knowledge that the induced acts constitute patent infringement.

227. Defendant possesses specific intent to encourage infringement by third parties, including without limitation end users of the Infringing Products.

C. Indirect Infringement (Contribution - 35 U.S.C. §§ 271(c) and/or 271(f))

228. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '418 patent by contributing to the infringement of the '418 patent under 35 U.S.C. § 271(c) and/or 271(f), either literally and/or under the doctrine of equivalents, by selling, offering for sale, and/or importing into the United States, the Infringing Products.

229. The Infringing Bluetooth Classic Products use the adaptive frequency hopping communication functionality in Version 1.2 and any later version of the Bluetooth Core Specification. Defendant knows that the Infringing Bluetooth Classic Products (i) constitute a material part of the inventions claimed in the '418 Patent; (ii) are especially made or adapted to infringe the '418 Patent; (iii) are not staple articles or commodities of commerce suitable for non-infringing use; and (iv) are components used for or in systems that use the adaptive frequency

hopping communication functionality in Version 1.2 and any later version of the Bluetooth Core Specification.

230. The Infringing Bluetooth LE Products use the low energy protocol in Version 4.0 and any later version of the Bluetooth Core Specification. Defendant knows that the Infringing Bluetooth LE Products (i) constitute a material part of the inventions claimed in the '418 Patent; (ii) are especially made or adapted to infringe the '418 Patent; (iii) are not staple articles or commodities of commerce suitable for non-infringing use; and (iv) are components used for or in systems that use the low energy protocol in Version 4.0 and any later version of the Bluetooth Core Specification.

231. Bandspeed is informed and believes that Defendant intends to and will continue to directly and indirectly infringe the '418 Patent. Bandspeed has been damaged as a result of Defendant's infringing conduct described in this Count. Defendant is, thus, liable to Bandspeed in an amount that adequately compensates Bandspeed for its infringement.

COUNT TWO

PATENT INFRINGEMENT – U.S. PATENT NO. 7,477,624 (AGAINST INFRINGING BLUETOOTH CLASSIC PRODUCTS)

232. Bandspeed realleges and incorporates the preceding paragraphs herein.

A. Direct Infringement (35 U.S.C. § 271(a))

233. Defendant has directly infringed, and continues to directly infringe, individually and/or jointly with others, one or more claims of the '624 Patent by, among other things, making, using, offering for sale, selling, and/or importing Infringing Bluetooth Classic Products.

234. Defendant jointly infringes the '624 Patent to the extent that the acts necessary to give rise to liability for direct infringement are shared between Defendant and a third party but can be legally attributed to Defendant. Defendant conditions participation in an activity or receipt of a

benefit upon performance of a step or steps of a patented method and establishes the manner or timing of that performance.

235. Specifically, Defendant provides third parties, including customers and/or end-users, with Infringing Bluetooth Classic Products. When an Infringing Bluetooth Classic Product is engaged to use Bluetooth functionality in the manner designed and established by Defendant, the performance of the infringing functionality occurs. Defendant dictates when and how infringement occurs by virtue of providing software and hardware in the Infringing Bluetooth Classic Products that dictate when and how the performance of the infringing functionality occurs.

B. Indirect Infringement (Inducement - 35 U.S.C. § 271(b))

236. Defendant has indirectly infringed and continues to indirectly infringe, the '624 Patent by inducing direct infringement of the '624 Patent by third parties including without limitation manufacturers, resellers, and/or end users of the products that contain Infringing Bluetooth Classic Products in this District and elsewhere in the United States.

237. On information and belief, despite having knowledge of the '624 Patent, Defendant has specifically intended for persons who acquire and use the Infringing Bluetooth Classic Products, including without limitation end-users of the Infringing Bluetooth Classic Products, to acquire and use such devices in such a way that infringes one or more claims of the '624 Patent.

238. Defendant knew or should have known that its actions were inducing infringement.

239. Defendant had knowledge of the '624 Patent and the infringing nature of its activities at least as early as the date when Plaintiff effected service of the original Complaint.

240. Direct infringement is the result of activities performed by third parties in relation to the Infringing Bluetooth Classic Products, including without limitation by third parties enabled and encouraged by Defendant to use the Infringing Bluetooth Classic Products in their normal, customary way to infringe the '624 Patent.

241. With knowledge of the '624 Patent, Defendant directs and aids third parties to infringe the '624 Patent by, among other things, (i) enabling a user of the Infringing Bluetooth Classic Products to use adaptive frequency hopping and associated functionality communication protocol in Version 1.2 and any later version of the Bluetooth Core Specification; (ii) providing instructions (including, by way of example, the tutorials, user guides, product guides, help library, and other documentation) to third parties for using the Infringing Bluetooth Classic Products in their customary way; (iii) advertising the Infringing Bluetooth Classic Products' support and compliance with the Bluetooth Core Specification; and (iv) providing to third parties the products and software and related equipment that may be required for or associated with infringement of the '624 Patent, all with knowledge that the induced acts constitute patent infringement.

242. Defendant possesses specific intent to encourage infringement by third parties, including without limitation end users of the Infringing Bluetooth Classic Products.

C. Indirect Infringement (Contribution - 35 U.S.C. §§ 271(c) and/or 271(f))

243. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '624 patent by contributing to the infringement of the '624 patent under 35 U.S.C. § 271(c) and/or 271(f), either literally and/or under the doctrine of equivalents, by selling, offering for sale, and/or importing into the United States, the Infringing Bluetooth Classic Products.

244. The Infringing Bluetooth Classic Products use the adaptive frequency hopping communication functionality in Version 1.2 and any later version of the Bluetooth Core Specification. Defendant knows that the Infringing Bluetooth Classic Products (i) constitute a material part of the inventions claimed in the '624 Patent; (ii) are especially made or adapted to infringe the '624 Patent; (iii) are not staple articles or commodities of commerce suitable for non-infringing use; and (iv) are components used for or in systems that use the adaptive frequency

hopping communication functionality in Version 1.2 and any later version of the Bluetooth Core Specification.

245. Bandspeed is informed and believes that Defendant intends to and will continue to directly and indirectly infringe the '624 Patent. Bandspeed has been damaged as a result of Defendant's infringing conduct described in this Count. Defendant is, thus, liable to Bandspeed in an amount that adequately compensates Bandspeed for its infringement.

COUNT THREE

PATENT INFRINGEMENT – U.S. PATENT NO. 7,570,614 (AGAINST INFRINGING BLUETOOTH CLASSIC PRODUCTS)

246. Bandspeed realleges and incorporates preceding paragraphs herein.

A. Direct Infringement (35 U.S.C. § 271(a))

247. Defendant has directly infringed, and continues to directly infringe, individually and/or jointly with others, one or more claims of the '614 Patent by, among other things, making, using, offering for sale, selling, and/or importing Infringing Bluetooth Classic Products.

248. Defendant jointly infringes the '614 Patent to the extent that the acts necessary to give rise to liability for direct infringement are shared between Defendant and a third party but can be legally attributed to Defendant. Defendant conditions participation in an activity or receipt of a benefit upon performance of a step or steps of a patented method and establishes the manner or timing of that performance.

249. Specifically, Defendant provides third parties, including customers and/or end-users, with Infringing Bluetooth Classic Products. When an Infringing Bluetooth Classic Product is engaged to use Bluetooth functionality in the manner designed and established by Defendant, the performance of the infringing functionality occurs. Defendant dictates when and how

infringement occurs by virtue of providing software and hardware in the Infringing Bluetooth Classic Products that dictate when and how the performance of the infringing functionality occurs.

B. Indirect Infringement (Inducement - 35 U.S.C. § 271(b))

250. Defendant has indirectly infringed and continues to indirectly infringe, the '614 Patent by inducing direct infringement of the '614 Patent by third parties including without limitation manufacturers, resellers, and/or end users of the products that contain Infringing Bluetooth Classic Products in this District and elsewhere in the United States.

251. On information and belief, despite having knowledge of the '614 Patent, Defendant has specifically intended for persons who acquire and use the Infringing Bluetooth Classic Products, including without limitation end-users of the Infringing Bluetooth Classic Products, to acquire and use such devices in such a way that infringes one or more claims of the '614 Patent.

252. Defendant knew or should have known that its actions were inducing infringement.

253. Defendant had knowledge of the '614 Patent and the infringing nature of its activities at least as early as the date when Plaintiff effected service of the original Complaint.

254. Direct infringement is the result of activities performed by third parties in relation to the Infringing Bluetooth Classic Products, including without limitation by third parties enabled and encouraged by Defendant to use the Infringing Bluetooth Classic Products in their normal, customary way to infringe the '614 Patent.

255. With knowledge of the '614 Patent, Defendant directs and aids third parties to infringe the '614 Patent by, among other things, (i) enabling a user of the Infringing Bluetooth Classic Products to use adaptive frequency hopping and associated functionality in Version 1.2 and any later version of the Bluetooth Core Specification; (ii) providing instructions (including, by way of example, the tutorials, user guides, product guides, help library, and other documentation) to third parties for using the Infringing Bluetooth Classic Products in their

customary way; (iii) advertising the Infringing Bluetooth Classic Products' support and compliance with the Bluetooth Core Specification; and (iv) providing to third parties the products and software and related equipment that may be required for or associated with infringement of the '614 Patent, all with knowledge that the induced acts constitute patent infringement.

256. Defendant possesses specific intent to encourage infringement by third parties, including without limitation end users of the Infringing Bluetooth Classic Products.

C. Indirect Infringement (Contribution - 35 U.S.C. §§ 271(c) and/or 271(f))

257. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '614 patent by contributing to the infringement of the '614 patent under 35 U.S.C. § 271(c) and/or 271(f), either literally and/or under the doctrine of equivalents, by selling, offering for sale, and/or importing into the United States, the Infringing Bluetooth Classic Products.

258. The Infringing Bluetooth Classic Products use the adaptive frequency hopping communication functionality in Version 1.2 and any later version of the Bluetooth Core Specification. Defendant knows that the Infringing Bluetooth Classic Products (i) constitute a material part of the inventions claimed in the '614 Patent; (ii) are especially made or adapted to infringe the '614 Patent; (iii) are not staple articles or commodities of commerce suitable for non-infringing use; and (iv) are components used for or in systems that use the adaptive frequency hopping communication functionality in Version 1.2 and any later version of the Bluetooth Core Specification.

259. Bandspeed is informed and believes that Defendant intends to and will continue to directly and indirectly infringe the '614 Patent. Bandspeed has been damaged as a result of Defendant's infringing conduct described in this Count. Defendant is, thus, liable to Bandspeed in an amount that adequately compensates Bandspeed for its infringement.

COUNT FOUR

**PATENT INFRINGEMENT – U.S. PATENT NO. 7,903,608
(AGAINST INFRINGING BLUETOOTH CLASSIC PRODUCTS
AND INFRINGING BLUETOOTH LE PRODUCTS)**

260. Bandspeed realleges and incorporates preceding paragraphs herein.

A. Direct Infringement (35 U.S.C. § 271(a))

261. Defendant has directly infringed, and continues to directly infringe, individually and/or jointly with others, one or more claims of the '608 Patent by, among other things, making, using, offering for sale, selling, and/or importing Infringing Products.

262. Defendant jointly infringes the '608 Patent to the extent that the acts necessary to give rise to liability for direct infringement are shared between Defendant and a third party but can be legally attributed to Defendant. Defendant conditions participation in an activity or receipt of a benefit upon performance of a step or steps of a patented method and establishes the manner or timing of that performance.

263. Specifically, Defendant provides third parties, including customers and/or end-users, with Infringing Products. When an Infringing Bluetooth Classic Product or Infringing Bluetooth LE Product is engaged to use Bluetooth functionality in the manner designed and established by Defendant, the performance of the infringing functionality occurs. Defendant dictates when and how infringement occurs by virtue of providing software and hardware in the Infringing Products that dictate when and how the performance of the infringing functionality occurs.

B. Indirect Infringement (Inducement - 35 U.S.C. § 271(b))

264. Defendant has indirectly infringed and continues to indirectly infringe, the '608 Patent by inducing direct infringement of the '608 Patent by third parties including without

limitation manufacturers, resellers, and/or end users of the products that contain Infringing Products in this District and elsewhere in the United States.

265. On information and belief, despite having knowledge of the '608 Patent, Defendant has specifically intended for persons who acquire and use the Infringing Products, including without limitation end-users of the Infringing Products, to acquire and use such devices in such a way that infringes one or more claims of the '608 Patent.

266. Defendant knew or should have known that its actions were inducing infringement.

267. Defendant had knowledge of the '608 Patent and the infringing nature of its activities at least as early as the date when Plaintiff effected service of the original Complaint.

268. Direct infringement is the result of activities performed by third parties in relation to the Infringing Products, including without limitation by third parties enabled and encouraged by Defendant to use the Infringing Products in their normal, customary way to infringe the '608 Patent.

269. With knowledge of the '608 Patent, Defendant directs and aids third parties to infringe the '608 Patent by, among other things, (i) enabling a user of the Infringing Bluetooth Classic Products to use adaptive frequency hopping and associated functionality in Version 1.2 and any later version of the Bluetooth Core Specification; (ii) providing instructions (including, by way of example, the tutorials, user guides, product guides, help library, and other documentation) to third parties for using the Infringing Bluetooth Classic Products in their customary way; (iii) advertising the Infringing Bluetooth Classic Products' support and compliance with the Bluetooth Core Specification; and (iv) providing to third parties the products and software and related equipment that may be required for or associated with infringement of the '608 Patent, all with knowledge that the induced acts constitute patent infringement.

270. With knowledge of the '608 Patent, Defendant directs and aids third parties to infringe the '608 Patent by, among other things, (i) enabling a user of the Infringing Bluetooth LE Products to use Bluetooth low energy functionality in Version 4.0 and any later version of the Bluetooth Core Specification; (ii) providing instructions (including, by way of example, the tutorials, user guides, product guides, help library, and other documentation) to third parties for using the Infringing Bluetooth LE Products in their customary way; (iii) advertising the Infringing Bluetooth LE Products' support and compliance with the Bluetooth Core Specification; and (iv) providing to third parties the products and software and related equipment that may be required for or associated with infringement of the '608 Patent, all with knowledge that the induced acts constitute patent infringement.

271. Defendant possesses specific intent to encourage infringement by third parties, including without limitation end users of the Infringing Products.

C. Indirect Infringement (Contribution - 35 U.S.C. §§ 271(c) and/or 271(f))

272. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '608 patent by contributing to the infringement of the '608 patent under 35 U.S.C. § 271(c) and/or 271(f), either literally and/or under the doctrine of equivalents, by selling, offering for sale, and/or importing into the United States, the Infringing Products.

273. The Infringing Bluetooth Classic Products use the adaptive frequency hopping communication functionality in Version 1.2 and any later version of the Bluetooth Core Specification. Defendant knows that the Infringing Bluetooth Classic Products (i) constitute a material part of the inventions claimed in the '608 Patent; (ii) are especially made or adapted to infringe the '608 Patent; (iii) are not staple articles or commodities of commerce suitable for non-infringing use; and (iv) are components used for or in systems that use adaptive frequency hopping

communication functionality in Version 1.2 and any later version of the Bluetooth Core Specification.

274. The Infringing Bluetooth LE Products use the low energy protocol in Version 4.0 and any later version of the Bluetooth Core Specification. Defendant knows that the Infringing Bluetooth LE Products (i) constitute a material part of the inventions claimed in the '608 Patent; (ii) are especially made or adapted to infringe the '608 Patent; (iii) are not staple articles or commodities of commerce suitable for non-infringing use; and (iv) are components used for or in systems that use the low energy protocol in Version 4.0 and any later version of the Bluetooth Core Specification.

275. Bandspeed is informed and believes that Defendant intends to and will continue to directly and indirectly infringe the '608 Patent. Bandspeed has been damaged as a result of Defendant's infringing conduct described in this Count. Defendant is, thus, liable to Bandspeed in an amount that adequately compensates Bandspeed for its infringement.

COUNT FIVE

PATENT INFRINGEMENT – U.S. PATENT NO. 8,542,643 (AGAINST INFRINGING BLUETOOTH CLASSIC PRODUCTS AND INFRINGING BLUETOOTH LE PRODUCTS)

276. Bandspeed realleges and incorporates preceding paragraphs herein.

A. Direct Infringement (35 U.S.C. § 271(a))

277. Defendant has directly infringed, and continues to directly infringe, individually and/or jointly with others, one or more claims of the '643 Patent by, among other things, making, using, offering for sale, selling, and/or importing Infringing Products.

278. Defendant jointly infringes the '643 Patent to the extent that the acts necessary to give rise to liability for direct infringement are shared between Defendant and a third party but can be legally attributed to Defendant. Defendant conditions participation in an activity or receipt of a

benefit upon performance of a step or steps of a patented method and establishes the manner or timing of that performance.

279. Specifically, Defendant provides third parties, including customers and/or end-users, with Infringing Products. When an Infringing Bluetooth Classic Product or Infringing Bluetooth LE Product is engaged to use Bluetooth functionality in the manner designed and established by Defendant, the performance of the infringing functionality occurs. Defendant dictates when and how infringement occurs by virtue of providing software and hardware in the Infringing Products that dictate when and how the performance of the infringing functionality occurs.

B. Indirect Infringement (Inducement - 35 U.S.C. § 271(b))

280. Defendant has indirectly infringed and continues to indirectly infringe, the '643 Patent by inducing direct infringement of the '643 Patent by third parties including without limitation manufacturers, resellers, and/or end users of the products that contain Infringing Products in this District and elsewhere in the United States.

281. On information and belief, despite having knowledge of the '643 Patent, Defendant has specifically intended for persons who acquire and use the Infringing Products, including without limitation end-users of the Infringing Products, to acquire and use such devices in such a way that infringes one or more claims of the '643 Patent.

282. Defendant knew or should have known that its actions were inducing infringement.

283. Defendant had knowledge of the '643 Patent and the infringing nature of its activities at least as early as the date when Plaintiff effected service of the original Complaint.

284. Direct infringement is the result of activities performed by third parties in relation to the Infringing Products, including without limitation by third parties enabled and encouraged

by Defendant to use the Infringing Products in their normal, customary way to infringe the '643 Patent.

285. With knowledge of the '643 Patent, Defendant directs and aids third parties to infringe the '643 Patent by, among other things, (i) enabling a user of the Infringing Bluetooth Classic Products to use adaptive frequency hopping and associated functionality in Version 1.2 and any later version of the Bluetooth Core Specification; (ii) providing instructions (including, by way of example, the tutorials, user guides, product guides, help library, and other documentation) to third parties for using the Infringing Bluetooth Classic Products in their customary way; (iii) advertising the Infringing Bluetooth Classic Products' support and compliance with the Bluetooth Core Specification; and (iv) providing to third parties the products and software and related equipment that may be required for or associated with infringement of the '643 Patent, all with knowledge that the induced acts constitute patent infringement.

286. With knowledge of the '643 Patent, Defendant directs and aids third parties to infringe the '643 Patent by, among other things, (i) enabling a user of the Infringing Bluetooth LE Products to use Bluetooth low energy functionality in Version 4.0 and any later version of the Bluetooth Core Specification; (ii) providing instructions (including, by way of example, the tutorials, user guides, product guides, help library, and other documentation) to third parties for using the Infringing Bluetooth LE Products in their customary way; (iii) advertising the Infringing Bluetooth LE Products' support and compliance with the Bluetooth Core Specification; and (iv) providing to third parties the products and software and related equipment that may be required for or associated with infringement of the '643 Patent, all with knowledge that the induced acts constitute patent infringement.

287. Defendant possesses specific intent to encourage infringement by third parties, including without limitation end users of the Infringing Products.

C. Indirect Infringement (Contribution - 35 U.S.C. §§ 271(c) and/or 271(f))

288. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '643 patent by contributing to the infringement of the '643 patent under 35 U.S.C. § 271(c) and/or 271(f), either literally and/or under the doctrine of equivalents, by selling, offering for sale, and/or importing into the United States, the Infringing Products.

289. The Infringing Bluetooth Classic Products use the adaptive frequency hopping communication functionality in Version 1.2 and any later version of the Bluetooth Core Specification. Defendant knows that the Infringing Bluetooth Classic Products (i) constitute a material part of the inventions claimed in the '643 Patent; (ii) are especially made or adapted to infringe the '643 Patent; (iii) are not staple articles or commodities of commerce suitable for non-infringing use; and (iv) are components used for or in systems that use adaptive frequency hopping communication functionality in Version 1.2 and any later version of the Bluetooth Core Specification.

290. The Infringing Bluetooth LE Products use the low energy protocol in Version 4.0 and any later version of the Bluetooth Core Specification. Defendant knows that the Infringing Bluetooth LE Products (i) constitute a material part of the inventions claimed in the '643 Patent; (ii) are especially made or adapted to infringe the '643 Patent; (iii) are not staple articles or commodities of commerce suitable for non-infringing use; and (iv) are components used for or in systems that use the low energy protocol in Version 4.0 and any later version of the Bluetooth Core Specification.

291. Bandspeed is informed and believes that Defendant intends to and will continue to directly and indirectly infringe the '643 Patent. Bandspeed has been damaged as a result of

Defendant's infringing conduct described in this Count. Defendant is, thus, liable to Bandspeed in an amount that adequately compensates Bandspeed for its infringement.

COUNT SIX

**PATENT INFRINGEMENT – U.S. PATENT NO. 8,873,500
(AGAINST INFRINGING BLUETOOTH CLASSIC PRODUCTS
AND INFRINGING BLUETOOTH LE PRODUCTS)**

292. Bandspeed realleges and incorporates preceding paragraphs herein.

A. Direct Infringement (35 U.S.C. § 271(a))

293. Defendant has directly infringed, and continues to directly infringe, individually and/or jointly with others, one or more claims of the '500 Patent by, among other things, making, using, offering for sale, selling, and/or importing Infringing Products.

294. Defendant jointly infringes the '500 Patent to the extent that the acts necessary to give rise to liability for direct infringement are shared between Defendant and a third party but can be legally attributed to Defendant. Defendant conditions participation in an activity or receipt of a benefit upon performance of a step or steps of a patented method and establishes the manner or timing of that performance.

295. Specifically, Defendant provides third parties, including customers and/or end-users, with Infringing Products. When an Infringing Bluetooth Classic Product or Infringing Bluetooth LE Product is engaged to use Bluetooth functionality in the manner designed and established by Defendant, the performance of the infringing functionality occurs. Defendant dictates when and how infringement occurs by virtue of providing software and hardware in the Infringing Products that dictate when and how the performance of the infringing functionality occurs.

B. Indirect Infringement (Inducement - 35 U.S.C. § 271(b))

296. Defendant has indirectly infringed and continues to indirectly infringe, the '500 Patent by inducing direct infringement of the '500 Patent by third parties including without limitation manufacturers, resellers, and/or end users of the products that contain Infringing Products in this District and elsewhere in the United States.

297. On information and belief, despite having knowledge of the '500 Patent, Defendant has specifically intended for persons who acquire and use the Infringing Products, including without limitation end-users of the Infringing Products, to acquire and use such devices in such a way that infringes one or more claims of the '500 Patent.

298. Defendant knew or should have known that its actions were inducing infringement.

299. Defendant had knowledge of the '500 Patent and the infringing nature of its activities at least as early as the date when Plaintiff effected service of the original Complaint.

300. Direct infringement is the result of activities performed by third parties in relation to the Infringing Products, including without limitation by third parties enabled and encouraged by Defendant to use the Infringing Products in their normal, customary way to infringe the '500 Patent.

301. With knowledge of the '500 Patent, Defendant directs and aids third parties to infringe the '500 Patent by, among other things, (i) enabling a user of the Infringing Bluetooth Classic Products to use adaptive frequency hopping and associated functionality in Version 1.2 and any later version of the Bluetooth Core Specification; (ii) providing instructions (including, by way of example, the tutorials, user guides, product guides, help library, and other documentation) to third parties for using the Infringing Bluetooth Classic Products in their customary way; (iii) advertising the Infringing Bluetooth Classic Products' support and compliance with the Bluetooth Core Specification; and (iv) providing to third parties the products

and software and related equipment that may be required for or associated with infringement of the '500 Patent, all with knowledge that the induced acts constitute patent infringement.

302. With knowledge of the '500 Patent, Defendant directs and aids third parties to infringe the '500 Patent by, among other things, (i) enabling a user of the Infringing Bluetooth LE Products to use Bluetooth low energy functionality in Version 4.0 and any later version of the Bluetooth Core Specification; (ii) providing instructions (including, by way of example, the tutorials, user guides, product guides, help library, and other documentation) to third parties for using the Infringing Bluetooth LE Products in their customary way; (iii) advertising the Infringing Bluetooth LE Products' support and compliance with the Bluetooth Core Specification; and (iv) providing to third parties the products and software and related equipment that may be required for or associated with infringement of the '500 Patent, all with knowledge that the induced acts constitute patent infringement.

303. Defendant possesses specific intent to encourage infringement by third parties, including without limitation end users of the Infringing Products.

C. Indirect Infringement (Contribution - 35 U.S.C. §§ 271(c) and/or 271(f))

304. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '500 patent by contributing to the infringement of the '500 patent under 35 U.S.C. § 271(c) and/or 271(f), either literally and/or under the doctrine of equivalents, by selling, offering for sale, and/or importing into the United States, the Infringing Products.

305. The Infringing Bluetooth Classic Products use the adaptive frequency hopping communication functionality in Version 1.2 and any later version of the Bluetooth Core Specification. Defendant knows that the Infringing Bluetooth Classic Products (i) constitute a material part of the inventions claimed in the '500 Patent; (ii) are especially made or adapted to infringe the '500 Patent; (iii) are not staple articles or commodities of commerce suitable for non-

infringing use; and (iv) are components used for or in systems that use adaptive frequency hopping communication functionality in Version 1.2 and any later version of the Bluetooth Core Specification.

306. The Infringing Bluetooth LE Products use the low energy protocol in Version 4.0 and any later version of the Bluetooth Core Specification. Defendant knows that the Infringing Bluetooth LE Products (i) constitute a material part of the inventions claimed in the '500 Patent; (ii) are especially made or adapted to infringe the '500 Patent; (iii) are not staple articles or commodities of commerce suitable for non-infringing use; and (iv) are components used for or in systems that use the low energy protocol in Version 4.0 and any later version of the Bluetooth Core Specification.

307. Bandspeed is informed and believes that Defendant intends to and will continue to directly and indirectly infringe the '500 Patent. Bandspeed has been damaged as a result of Defendant's infringing conduct described in this Count. Defendant is, thus, liable to Bandspeed in an amount that adequately compensates Bandspeed for its infringement.

COUNT SEVEN

PATENT INFRINGEMENT – U.S. PATENT NO. 9,379,769 (AGAINST INFRINGING BLUETOOTH CLASSIC PRODUCTS AND INFRINGING BLUETOOTH LE PRODUCTS)

308. Bandspeed realleges and incorporates the preceding paragraphs herein.

A. Direct Infringement (35 U.S.C. § 271(a))

309. Defendant has directly infringed, and continues to directly infringe, individually and/or jointly with others, one or more claims of the '769 Patent by, among other things, making, using, offering for sale, selling, and/or importing Infringing Products.

310. Defendant jointly infringes the '769 Patent to the extent that the acts necessary to give rise to liability for direct infringement are shared between Defendant and a third party but can

be legally attributed to Defendant. Defendant conditions participation in an activity or receipt of a benefit upon performance of a step or steps of a patented method and establishes the manner or timing of that performance.

311. Specifically, Defendant provides third parties, including customers and/or end-users, with Infringing Products. When an Infringing Bluetooth Classic Product or Infringing Bluetooth LE Product is engaged to use Bluetooth functionality in the manner designed and established by Defendant, the performance of the infringing functionality occurs. Defendant dictates when and how infringement occurs by virtue of providing software and hardware in the Infringing Products that dictate when and how the performance of the infringing functionality occurs.

B. Indirect Infringement (Inducement - 35 U.S.C. § 271(b))

312. Defendant has indirectly infringed and continues to indirectly infringe, the '769 Patent by inducing direct infringement of the '769 Patent by third parties including without limitation manufacturers, resellers, and/or end users of the products that contain Infringing Products in this District and elsewhere in the United States.

313. On information and belief, despite having knowledge of the '769 Patent, Defendant has specifically intended for persons who acquire and use the Infringing Products, including without limitation end-users of the Infringing Products, to acquire and use such devices in such a way that infringes one or more claims of the '769 Patent.

314. Defendant knew or should have known that its actions were inducing infringement.

315. Defendant had knowledge of the '769 Patent and the infringing nature of its activities at least as early as the date when Plaintiff effected service of the original Complaint.

316. Direct infringement is the result of activities performed by third parties in relation to the Infringing Products, including without limitation by third parties enabled and encouraged

by Defendant to use the Infringing Products in their normal, customary way to infringe the '769 Patent.

317. With knowledge of the '769 Patent, Defendant directs and aids third parties to infringe the '769 Patent by, among other things, (i) enabling a user of the Infringing Bluetooth Classic Products to use adaptive frequency hopping and associated functionality in Version 1.2 and any later version of the Bluetooth Core Specification; (ii) providing instructions (including, by way of example, the tutorials, user guides, product guides, help library, and other documentation) to third parties for using the Infringing Bluetooth Classic Products in their customary way; (iii) advertising the Infringing Bluetooth Classic Products' support and compliance with the Bluetooth Core Specification; and (iv) providing to third parties the products and software and related equipment that may be required for or associated with infringement of the '769 Patent, all with knowledge that the induced acts constitute patent infringement.

318. With knowledge of the '769 Patent, Defendant directs and aids third parties to infringe the '769 Patent by, among other things, (i) enabling a user of the Infringing Bluetooth LE Products to use Bluetooth low energy functionality in Version 4.0 and any later version of the Bluetooth Core Specification; (ii) providing instructions (including, by way of example, the tutorials, user guides, product guides, help library, and other documentation) to third parties for using the Infringing Bluetooth LE Products in their customary way; (iii) advertising the Infringing Bluetooth LE Products' support and compliance with the Bluetooth Core Specification; and (iv) providing to third parties the products and software and related equipment that may be required for or associated with infringement of the '769 Patent, all with knowledge that the induced acts constitute patent infringement.

319. Defendant possesses specific intent to encourage infringement by third parties, including without limitation end users of the Infringing Products.

C. Indirect Infringement (Contribution - 35 U.S.C. §§ 271(c) and/or 271(f))

320. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '769 patent by contributing to the infringement of the '769 patent under 35 U.S.C. § 271(c) and/or 271(f), either literally and/or under the doctrine of equivalents, by selling, offering for sale, and/or importing into the United States, the Infringing Products.

321. The Infringing Bluetooth Classic Products use the adaptive frequency hopping communication functionality in Version 1.2 and any later version of the Bluetooth Core Specification. Defendant knows that the Infringing Bluetooth Classic Products (i) constitute a material part of the inventions claimed in the '769 Patent; (ii) are especially made or adapted to infringe the '769 Patent; (iii) are not staple articles or commodities of commerce suitable for non-infringing use; and (iv) are components used for or in systems that use the adaptive frequency hopping communication functionality in Version 1.2 and any later version of the Bluetooth Core Specification.

322. The Infringing Bluetooth LE Products use the low energy protocol in Version 4.0 and any later version of the Bluetooth Core Specification. Defendant knows that the Infringing Bluetooth LE Products (i) constitute a material part of the inventions claimed in the '769 Patent; (ii) are especially made or adapted to infringe the '769 Patent; (iii) are not staple articles or commodities of commerce suitable for non-infringing use; and (iv) are components used for or in systems that use the low energy protocol in Version 4.0 and any later version of the Bluetooth Core Specification.

323. Bandspeed is informed and believes that Defendant intends to and will continue to directly and indirectly infringe the '769 Patent. Bandspeed has been damaged as a result of

Defendant's infringing conduct described in this Count. Defendant is, thus, liable to Bandspeed in an amount that adequately compensates Bandspeed for its infringement.

COUNT EIGHT

**PATENT INFRINGEMENT – U.S. PATENT NO. 9,883,520
(AGAINST INFRINGING BLUETOOTH CLASSIC PRODUCTS
AND INFRINGING BLUETOOTH LE PRODUCTS)**

324. Bandspeed realleges and incorporates the preceding paragraphs herein.

A. Direct Infringement (35 U.S.C. § 271(a))

325. Defendant has directly infringed, and continues to directly infringe, individually and/or jointly with others, one or more claims of the '520 Patent by, among other things, making, using, offering for sale, selling, and/or importing Infringing Products.

326. Defendant jointly infringes the '520 Patent to the extent that the acts necessary to give rise to liability for direct infringement are shared between Defendant and a third party but can be legally attributed to Defendant. Defendant conditions participation in an activity or receipt of a benefit upon performance of a step or steps of a patented method and establishes the manner or timing of that performance.

327. Specifically, Defendant provides third parties, including customers and/or end-users, with Infringing Products. When an Infringing Bluetooth Classic Product or Infringing Bluetooth LE Product is engaged to use Bluetooth functionality in the manner designed and established by Defendant, the performance of the infringing functionality occurs. Defendant dictates when and how infringement occurs by virtue of providing software and hardware in the Infringing Products that dictate when and how the performance of the infringing functionality occurs.

B. Indirect Infringement (Inducement - 35 U.S.C. § 271(b))

328. Defendant has indirectly infringed and continues to indirectly infringe, the '520 Patent by inducing direct infringement of the '520 Patent by third parties including without limitation manufacturers, resellers, and/or end users of the products that contain Infringing Products in this District and elsewhere in the United States.

329. On information and belief, despite having knowledge of the '520 Patent, Defendant has specifically intended for persons who acquire and use the Infringing Products, including without limitation end-users of the Infringing Products, to acquire and use such devices in such a way that infringes one or more claims of the '520 Patent.

330. Defendant knew or should have known that its actions were inducing infringement.

331. Defendant had knowledge of the '520 Patent and the infringing nature of its activities at least as early as the date when Plaintiff effected service of the original Complaint.

332. Direct infringement is the result of activities performed by third parties in relation to the Infringing Products, including without limitation by third parties enabled and encouraged by Defendant to use the Infringing Products in their normal, customary way to infringe the '520 Patent.

333. With knowledge of the '520 Patent, Defendant directs and aids third parties to infringe the '520 Patent by, among other things, (i) enabling a user of the Infringing Bluetooth Classic Products to use adaptive frequency hopping and associated functionality in Version 1.2 and any later version of the Bluetooth Core Specification; (ii) providing instructions (including, by way of example, the tutorials, user guides, product guides, help library, and other documentation) to third parties for using the Infringing Bluetooth Classic Products in their customary way; (iii) advertising the Infringing Bluetooth Classic Products' support and compliance with the Bluetooth Core Specification; and (iv) providing to third parties the products

and software and related equipment that may be required for or associated with infringement of the '520 Patent, all with knowledge that the induced acts constitute patent infringement.

334. With knowledge of the '520 Patent, Defendant directs and aids third parties to infringe the '520 Patent by, among other things, (i) enabling a user of the Infringing Bluetooth LE Products to use Bluetooth low energy functionality in Version 4.0 and any later version of the Bluetooth Core Specification; (ii) providing instructions (including, by way of example, the tutorials, user guides, product guides, help library, and other documentation) to third parties for using the Infringing Bluetooth LE Products in their customary way; (iii) advertising the Infringing Bluetooth LE Products' support and compliance with the Bluetooth Core Specification; and (iv) providing to third parties the products and software and related equipment that may be required for or associated with infringement of the '520 Patent, all with knowledge that the induced acts constitute patent infringement.

335. Defendant possesses specific intent to encourage infringement by third parties, including without limitation end users of the Infringing Products.

C. Indirect Infringement (Contribution - 35 U.S.C. §§ 271(c) and/or 271(f))

336. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '520 patent by contributing to the infringement of the '520 patent under 35 U.S.C. § 271(c) and/or 271(f), either literally and/or under the doctrine of equivalents, by selling, offering for sale, and/or importing into the United States, the Infringing Products.

337. The Infringing Bluetooth Classic Products use the adaptive frequency hopping communication functionality in Version 1.2 and any later version of the Bluetooth Core Specification. Defendant knows that the Infringing Bluetooth Classic Products (i) constitute a material part of the inventions claimed in the '520 Patent; (ii) are especially made or adapted to infringe the '520 Patent; (iii) are not staple articles or commodities of commerce suitable for non-

infringing use; and (iv) are components used for or in systems that use the adaptive frequency hopping communication functionality in Version 1.2 and any later version of the Bluetooth Core Specification.

338. The Infringing Bluetooth LE Products use the low energy protocol in Version 4.0 and any later version of the Bluetooth Core Specification. Defendant knows that the Infringing Bluetooth LE Products (i) constitute a material part of the inventions claimed in the '520 Patent; (ii) are especially made or adapted to infringe the '520 Patent; (iii) are not staple articles or commodities of commerce suitable for non-infringing use; and (iv) are components used for or in systems that use the low energy protocol in Version 4.0 and any later version of the Bluetooth Core Specification.

339. Bandspeed is informed and believes that Defendant intends to and will continue to directly and indirectly infringe the '520 Patent. Bandspeed has been damaged as a result of Defendant's infringing conduct described in this Count. Defendant is, thus, liable to Bandspeed in an amount that adequately compensates Bandspeed for its infringement.

VI. WILLFULNESS

340. Bandspeed realleges and incorporates the preceding paragraphs herein.

341. Defendant Silicon Laboratories Inc. is the original assignee of U.S. Patent No. 7,957,696. U.S. Patent No. 7,957,696 was filed on September 25, 2006. U.S. Patent No. 7,957,696 was issued on June 7, 2011.

342. The examiner for U.S. Patent No. 7,957,696 cited as relevant prior art U.S. Application No. 2002/0136268. U.S. Application No. 2002/0136268 became the '418 Patent.

343. Defendant has knowledge of the '418 Patent.

344. The '624, '608, '643, '500, '769 and '520 Patents all claim priority to the '418 Patent. Defendant has knowledge of the '624, '608, '643, '500, '769 and '520 Patents.

345. Despite Defendant's knowledge of the '418 and the related patents and/or applications, including the '624, '608, '643, '500, '769 and '520 Patents, Defendant continued its infringement. Accordingly, Defendant acted knowingly or intentionally in infringing the '418, '624, '608, '643, '500, '769 and '520 Patents.

346. Bandspeed seeks enhanced damages pursuant to 35 U.S.C. §284.

VII. JURY DEMAND

347. Plaintiff Bandspeed hereby demands a jury on all issues so triable.

VIII. REQUEST FOR RELIEF

WHEREFORE, Plaintiff Bandspeed respectfully requests that the Court:

- A. Enter judgment that Defendant infringes one or more claims of the Patents literally and/or under the doctrine of equivalents;
- B. Award Plaintiff Bandspeed past and future damages together with prejudgment and post-judgment interest to compensate for the infringement by Defendant of the Patents in accordance with 35 U.S.C. §284, and increase such award by up to three times the amount found or assessed in accordance with 35 U.S.C. §284;
- C. Award plaintiff Bandspeed its costs, disbursements, attorneys' fees, and such further and additional relief as is deemed appropriate by this Court.

Dated: June 21, 2018

Respectfully submitted,

By: /s/ Adam G. Price
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Christopher V. Goodpastor
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**ATTORNEYS FOR PLAINTIFF
BANDSPEED, LLC**